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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/633,715

08/05/2003

Joseph Lakowicz

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01/05/2006

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EXAMINER

GEISEL, KARA E

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 01/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/633,715	<b>Applicant(s)</b> LAKOWICZ ET AL.	
	<b>Examiner</b> Kara E. Geisel	<b>Art Unit</b> 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.  
4a) Of the above claim(s) 1-13 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24 is/are allowed.
- 6) ☒ Claim(s) 14 and 17-22 is/are rejected.
- 7) ☒ Claim(s) 15, 16 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0803, 0704</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of claims 14-24 in the paper filed October 6<sup>th</sup>, 2005 is acknowledged.

### ***Information Disclosure Statement***

The information disclosure statements filed August 5<sup>th</sup>, 2003 and July 8<sup>th</sup>, 2004, have been considered by the examiner.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 17-18 recite the limitation "said fluorescence emissions" in line 3 and lines 5-6, respectively. There is insufficient antecedent basis for this limitation in the claims.

Claim 19 recites the limitation "said plasmon reflection signal and said fluorescence emissions" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claims 20-21 recite the limitation "said plasmon reflection signal detector and said fluorescence emissions detector" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "said plasmon reflection signal detector and said fluorescence emissions to said fluorescence emissions detector" in lines 2-3. There is insufficient antecedent basis for these limitations in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 14 is rejected under 35 U.S.C. 102(e) as being anticipated by McDermott (USPN 6,361,190).

In regards to claim 14, McDermott discloses a sensor (figs. 3-4) comprising a light emitting diode (LED) (3) having a conical shaped depression on a front end surface (8), the conical shaped depression having curved sides (the nature of a conical shape inherently causes the sides to be curved), the curved sides having a conductive coating (12) on an outer surface with respect to the LED (column 9, lines 1-8), and wherein a radius of curvature of the curve sides is set to provide directional emissions (column 2, lines 13-25). In regards to line 1, with a sensor “using metal enhanced fluorescence” it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987).

*Allowable Subject Matter*

Claim 24 is allowed over the prior art of record.

Claims 15-16 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claim 15, the prior art of record, taken alone or in combination, fails to disclose or render obvious a sensor wherein direction emissions are induced by a surface plasmon excitation of a

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fluorophore disposed adjacent to a conductive coating, in combination with the rest of the limitations of claim 15.

As to claim 15, the prior art of record, taken alone or in combination, fails to disclose or render obvious a sensor wherein a porous silica provides a size inclusion/exclusion sensing of different sized weakly fluorescent species, in combination with the rest of the limitations of claim 15.

As to claim 24, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method of detection comprising forming a front end of a LED to have a depression, coating an outer surface of the curved sides of the depression with a conductive material and inducing directional emission by surface plasmon excitation of a fluorophore disposed adjacent to the conductive material, in combination with the rest of the limitations of claim 24.

#### *Additional Prior Art*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art made of record is Watanabe et al. (JPO 07-7184).

Watanabe discloses a sensor comprising a light emitting diode (LED) having a conical shaped depression on a front end surface, the conical shaped depression having curved sides, the curved sides having a conductive coating on an outer surface with respect to the LED, and wherein a radius of curvature of the curve sides is set to provide directional emissions.

#### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kara E Geisel whose telephone number is **571 272 2416**. The examiner can normally be reached on Monday through Friday, 8am to 4pm.

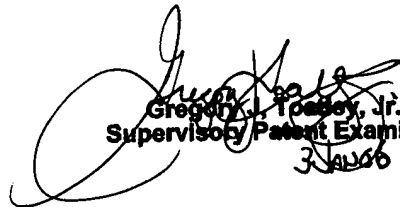
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on **571 272 2800 ext. 77**. The fax phone number for the organization where this application or proceeding is assigned is **571 273 8300**.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregory J. Toatley, Jr.  
SPE  
Art Unit 2877

KEG  
December 29, 2005

  
Gregory J. Toatley, Jr.  
Supervisory Patent Examiner  
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